

Substitute for Form 1449A/PTO (Modified)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	09/704,991
Filing Date	November 2, 2000
First Named Inventor:	Edward L. Schwarz
Group Art Unit	2621
Examiner Name	Unknown

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Sheet 1 of 5

U.S. PATENT DOCUMENTS

Exam. Initial ^a	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Code ²	Kind (If known)			
JW	A	4985927		Norwood et al.	01/15/1991	
JW	B	4987480		Lipmann et al.	01/22/1991	
JW	C	5000183		Bonnefous	03/19/1991	
JW	D	5001764		Wood et al.	03/19/1991	
JW	E	5014134		Lawton et al.	05/07/1991	
JW	F	5018210		Merryman et al.	05/21/1991	
JW	G	5068911		Resnikoff et al.	11/26/1991	
JW	H	5073964		Resnikoff	12/17/1991	
JW	I	5095447		Manns et al.	03/10/1992	
JW	J	5101446		Resnikoff et al.	03/31/1992	
JW	K	5103306		Weiman et al.	04/07/1992	
JW	L	5121191		Cassereau et al.	06/09/1992	
JW	M	5124930		Nicolas et al.	06/23/1992	
JW	N	5128757		Citta et al.	07/07/1992	
JW	O	5148498		Resnikoff et al.	09/15/1992	
JW	P	5152953		Ackerman	10/06/1992	
JW	Q	5156943		Whitney	10/20/1992	
JW	R	5173880		Duren et al.	12/22/1992	
JW	S	5420891		Akansu	05/30/1995	
JW	T	3580655		Leith et al.	05/25/1971	

FOREIGN PATENT DOCUMENTS

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		Office ³	Number ⁴	Kind Code ⁵ (If known)				
JW	U	WO	9423385			10/13/1994		
JW	V	EP	0622741			03/30/1994		
JW	W	UK	2284121			05/24/1995		
JW	X	WO	9609718			03/28/1996		
JW	Y	WO	9519683			07/20/1995		
JW	Z	EP	0701375			03/13/1996		
JW	AA	UK	2211691			07/05/1989		

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Date Considered

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^aUnique citation designation number. ^bSee attached Kinds of U.S. Patent Documents. ^cEnter Office that issued the document, by the two-letter code (WIPO Standard S.3). ^dFor Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. ^eKind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ^fApplicant is to place a check mark here if English language Translation is attached.

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Sheet 2 of 5 Attorney Docket Number 74451.P042X2

U.S. PATENT DOCUMENTS

Exam. Initial ¹	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Code ²	Kind (If known)			
JW	BB	3950103		Schmidt-Weinmar	04/13/1976	
JW	CC	4136954		Jamieson	01/30/1979	
JW	DD	4223354		Noble et al.	09/16/1980	
JW	EE	4599567		Goupillaud et al.	07/08/1986	
JW	FF	4663660		Fedele et al.	05/05/1987	
JW	GG	4701006		Perlmutter	10/20/1987	
JW	HH	4760563		Beykin	07/26/1988	
JW	II	4785349		Keith et al.	11/15/1988	
JW	JJ	4805129		David	02/14/1989	OCT 31 2002
JW	KK	4817182		Adelson et al.	03/28/1989	
JW	LL	4821223		David	04/11/1989	Technology Center 2600
JW	MM	4827336		Acampora et al.	05/02/1989	
JW	NN	4829378		LeGall	05/09/1989	
JW	OO	4837517		Barber	06/06/1989	
JW	PP	4864398		Avis et al.	09/05/1989	
JW	QQ	4897717		Hamilton et al.	01/30/1990	
JW	RR	4904073		Lawton et al.	02/27/1990	
JW	SS	4929223		Walsh	05/29/1990	
JW	TT	4936665		Whitney	06/26/1990	
JW	UU	4974187		Lawton	11/27/1990	
JW	VV	4982283		Acampora	1/1/1991	

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		Office ³	Number ⁴	Kind Code ⁵ (If known)				
JW	WW	EP	0593013			04/20/1994		
JW	XX	EP	0510933			10/28/1992		
JW	YY	WO	8810049			12/15/1988		
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Filing Date November 2, 2000

First Named Inventor: Edward

Group Art Unit 2621

Examiner Name **Unknown**

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Attorney Docket Number

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				Group Art Unit	2621
				Examiner Name	Unknown
Sheet 5		of 5	Attorney Docket Number 74451.P042X2		
OTHER ART - NO PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published			T ²
<i>JL</i>	WWW	1977 IEEE International Conference on Acoustics Speech & Signal Processing, "Application of Quadrature Mirror Filters to Split Band Voice Coding Schemes", D. Esteban and C. Galand, pp. 191-195.			
<i>JL</i>	XXX	Martin Vetterli, "Filter Banks Allowing Perfect Reconstruction", <u>Signal Processing 10</u> , (1986), pp. 219-244.			
<i>JL</i>	YYY	R.E. Crochiere, S.A. Webber, J.L. Flanagan, "Digital Coding of Speech in Sub-bands", 1976, American Telephone and Telegraph Company, The Bell System Technical Journal, Vol. 55, No. 8, October 1976, pp. 1069-1085.			
<i>JL</i>	ZZZ	John W. Woods and Sean D. O'Neil, "Sub-band Coding of Images", <u>Proceedings ICASSP 86</u> , Tokyo, Japan, April 1986, pp. 1005-1008.			
<i>JL</i>	AAAA	"Proceedings: ICASSP 87", 1987 International Conference on Acoustics, Speech, and Signal Processing, April 6, 7, 8, 9, 1987, Volume 3 of 4, "Sub-band coding of Images Using Predictive Vector Quantization", P.H. Westernick, J. Biemond and D.E. Boekee, pp. 1378 - 1381.			
<i>JL</i>	BBBB	Mark J.T. Smith and Thomas P. Barnwell, III, "Exact Reconstruction Techniques for Tree-Structured Subband Coders", <u>IEEE Transactions on Acoustics, Speech, and Signal Processing</u> , Vol. ASSP-34, No. 3, June 1986, p. 434-441.			
<i>JL</i>	CCCC	Marvin Vetterli, "Multi-Dimensional Sub-band coding: Some Theory and Algorithms", <u>Signal Processing 6</u> (1984), pp. 97-112.			
<i>JL</i>	DDDD	H. Gharavi and Ali Tabatabai, "Sub-band coding of Digital Images Using Two-Dimensional Quadrature Mirror Filtering", SPIE Vol. 707 Visual Communications and Image Processing, pp. 51-61.			
<i>JL</i>	EEEE	"Proceedings: ICASSP 87", 1987 International Conference on Acoustics, Speech, and Signal Processing, April 6, 7, 8, 9, 1987, Volume 4 of 4, "Application of Quadrature Mirror Filtering to the Coding of Monochrome and Color Images", H. Gharavi and A. Tabatabai, pp. 2384-2387.			
<i>JL</i>	FFFF	International Search report for Application No. GB 9518298.6, dated November 1995.			RECEIVED OCT 31 2002
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Sheet 1 of 6

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First Named Inventor:	Edward L. Schwartz
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Attorney Docket Number 74451.P042X2

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JW	A	6118902		Knowles	09/12/2000	
JW	B	5867602		Zandi et al.	02/02/1999	
JW	C	5638498		Tyler et al.	06/10/1997	
JW	D	5602589		Vishwanath et al.	02/11/1997	
JW	E	5563960		Shapiro	10/08/1996	
JW	F	5546477		Knowles et al.	08/13/1996	
JW	G	5537493		Wilkinson	07/16/1996	
JW	H	5534925		Zhong	07/09/1996	
JW	I	5497435		Berger	03/05/1996	
JW	J	5453945		Tucker et al.	09/26/1995	RECEIVED
JW	K	5412741		Shapiro	05/02/1995	NOV 01 2002
JW	L	5381145		Allen et al.	01/10/1995	
JW	M	5379355		Allen	01/03/1995	Technology Center 2600
JW	NI	5347479		Miyazaki	09/13/1994	
JW	N2	5335016		Nakagawa	08/02/1994	
JW	O	5241395		Chen	08/31/1993	
JW	P	5235434		Wober	05/10/1993	
JW	Q	5148498		Resnikoff et al.	09/1992	
JW	R	5109451		Aono et al.	04/28/1992	
JW	S	4999705		Puri	03/12/1991	
JW	T	4922544		Stansfield et al.	05/01/1990	

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		Office ³	Number ⁴	Kind Code ⁵ (if known)				
JW	U	GB	2303031			06/25/1996		
JW	V	GB	2303030			06/25/1996		
JW	W	GB	2293734			07/09/1995		
JW	X	GB	2293733			07/09/1995		
JW	Y	UK	2285374	A		05/07/1995		
JW	Z	EP	0662741	A2		11/02/1994		
JW	AA	EP	0611051	A1		08/17/1994		

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		Office ³	Number ⁴	Kind Code ⁵			
				(If known)			
JW	DD	WO	9417492		08/04/1994		
JW	EE	EP	0593013	A2	04/20/1994		
JW	FF	WO	9310634		05/27/1993		
JW	GG	EP	0510933	A1	10/28/1992		
JW	HH	WO	9118361		11/28/1991		
JW	II	WO	9103902		03/21/1991		
JW	JJ	UK	2211691	A	05/07/1989		

Examiner Signature		Date Considered	4/18/05
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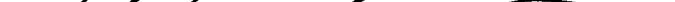
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37.10 If possible, Applicant is to place a check mark here if English language Translation is attached.

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OTHER ART - NO PATENT LITERATURE DOCUMENTS																	
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published			T ²												
<i>JW</i>	MM	Mutsumi Ohta, Mitsuharu Yano and Takao Nishitani, "Wavelet Picture Coding with Transform Coding Approach", 1/31/99, pp. 776-785.															
<i>JW</i>	NN	French Search Report, FR9511024, 11/26/1996.			RECEIVED												
<i>JW</i>	OO	French Search Report, FR9511023, 11/26/1996.			NOV 01 2002												
<i>JW</i>	PP	Dutch Search Report, NO133082, 11/26/1996.			Technology Center 2600												
<i>JW</i>	QQ	Calderbank, et al., "Wavelet Transforms That Map Integers to Integers", August 1996.															
<i>JW</i>	RR	Szu et al., "Image Wavelet Transforms Implemented by Discrete Wavelet Chips", July 1994, <u>Optimal Engineering</u> , Vol. 33, No. 7, pp. 2310-2325.															
<i>JW</i>	SS	Villasenor, et al., "Filter Evaluation and Selection in Wavelet Image Compression", <u>IEEE</u> , 1994, pp. 351-360.															
<i>JW</i>	TT	Denk, et al., "Architectures for Lattice Structure Based Orthonormal Discrete Wavelet Transforms", <u>IEEE</u> , 1994, pp. 259-270.															
<i>JW</i>	UU	Shapiro, "Embedded Image Coding Using Zerotrees of Wavelet Coefficients", <u>IEEE Transactions on Signal Processing</u> , 12/93, No. 12, pp. 3445-3462.															
<i>JW</i>	VV	Jie Chen, Shuichi Itoh, and Takeshi Nishitani, "Wavelet Picture Coding with Transform Coding Approach", 1/31/99, pp. 776-785.															
<i>JW</i>	WW	Padmanabhan, et al., "Feedback-Based Orthogonal Digital Filters", <u>IEEE Transactions on Circuits and Systems</u> , 8/93, No. 8, pp. 512-525.															
<i>JW</i>	XX	Said, et al., "Reversible Image Compression Via Multiresolution Representation and Predictive Coding", <u>SPIE</u> , Vol. 2094, 8/11/93, pp. 664-674.															

Examiner Signature		Date Considered	4/13/10
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OTHER ART - NO PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
JL	YY	Said, et al., "Image Compression Using the Spatial-Orientation Tree", <u>IEEE</u> , 1993, pp. 279-282.	
JL	ZZ	Xiong, et al., "Joint Optimization of Scalar and Tree-Structured Quantization of Wavelet Image Decompositions", <u>IEEE</u> , 1/11/93, pp.891-895.	
JL	AAA	Howard et al., "Fast and Efficient Lossless Image Compression", <u>IEEE</u> , 1993, pp. 351-360.	
JL	BBB	Shapiro, J.M., "An Embedded Hierarchical Image Coder Using Zerotrees of Wavelet Coefficients", <u>IEEE</u> , 1993, pp. 214-223.	
JL	CCC	Cha Keon Cheong, Kyoharu Aizawa, Takahiro Saito and Mitsutoshi Hatori; "Subband Image Coding with Biorthogonal Wavelets"; 7/92; Pages 871-881	
JL	DDD	Antonini et al., "Image Coding Using Wavelet Transform", <u>IEEE Transactions on Image Processing</u> , Vol. 1, No. 2, April 1992, pp. 205-220.	
JL	EEE	Chui, et al., "Wavelets on a Bounded Interval", <u>Numerical Methods of Approximation Theory</u> , Vol. 9, 1992, pp. 53-75.	
JL	FFF	Shah et al., "A Chip Set for Lossless Image Compression", <u>IEEE Journal of Solid-State Circuits</u> , Vol. 26, No. 3, March 1991, pp. 237-244.	
JL	GGG	Langdon, Jr., Glen G., "Sunset: A Hardware-Oriented Algorithm for Lossless Compression of Gray Scale images", <u>SPIE Vol. 1444, Image Capture, Formatting, and Display</u> , 1991, p. 272-282.	
JL	HHH	A.S. Lewis and G. Knowles; "Image Compression Using the 2-D Wavelet Transform"; 11/15/90, Pages 244-250	
JL	III	Le Gall, et al., "Sub-band Coding of Digital Images Using Symmetric Short Kernel Filters and Arithmetic Coding Techniques", 1988, <u>International Conference on Acoustics, Speech and Signal Processing</u> , pp. 761-764.	

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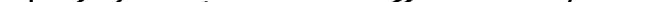
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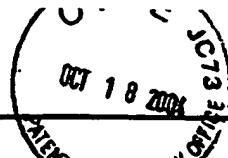
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¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard S.3). ⁴For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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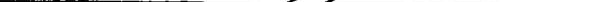
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<p>Substitute for Form 1449/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p><i>(use as many sheets as necessary)</i></p>		<p>Complete if Known</p>	
		Application Number	09/704,991
		Filing Date	November 1, 2000
		First Named Inventor:	Edward L. Schwartz
		Art Unit	2623
		Examiner Name	Wu, Jingge
Sheet	1	of 1	Attorney Docket Number
74451.P042X2			

NON-PATENT LITERATURE DOCUMENTS

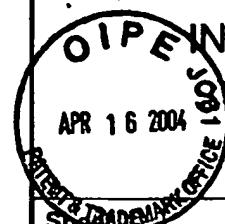
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
JW		WU, ET AL., On Optimal Multi-resolution Scalar Quantization, Proceedings DCC 2002, Data Compression Conference, April 2-4, 2002, Snowbird, Utah, IEEE Computer Society, Los Alamitos, California, Washington, Brussels, Tokyo, pgs. 322-331.	

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Examiner Name	Jingge Wu

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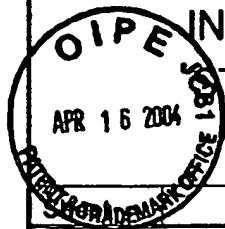
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		Number-Kind Code ² (if known)			
JW		us- 3,580,655	5/25/1971	Leith et al.	
JW		us- 3,950,103	4/13/1976	Schmidt-Weinmar	
JW		us- 4,136,954	1/30/1979	Jamieson	
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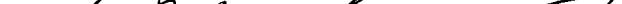
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Application Number	09/704,991
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First Named Inventor:	Edward L. Schwartz
Art Unit	2623
Examiner Name	Jingge Wu

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JW	us- 5,414,780		5/9/1995	Carmanah	
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Examiner Name	Jingge Wu

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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
JW		EPO 0510933 A1	10/28/1992	Canon Kabushiki Kaisha		
JW		EPO 0593013 A2	4/20/1994	Kabushiki Kaisha Toshiba		
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
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Application Number	09/704,991
Filing Date	11/01/2000
First Named Inventor:	Edward L. Schwartz
Art Unit	2623
Examiner Name	Jingge Wu

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Art Unit	2623
Examiner Name	Jingge Wu

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Sheet 8 of 8 Attorney Docket Number 074451.P04242

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Application Number	09/704,991
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First Named Inventor:	Edward L. Schwartz
Art Unit	2623
Examiner Name	Wu, Jingge
Attorney Docket Number	74451.P042X2

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